**Claims**

1. LED operation light, comprising:

at least two power sources (PW), at least one which is an adjustable power source (ADJ-PW), and

at least two LED component units (LG) for emitting light in response to power received from a power source (PW), which LED component units (LG) comprise at least one LED component (LED) and which LED components (LED) have been arranged to produce color components of light emission of the said LED operation light at two different wavelengths at least,

characterized in that

the said LED operation light additionally comprises:

at least one measuring means (MM) for measuring the color temperature of the light emission produced by the said LED component units (LG), possibly reflected from some surface, or of at least one such magnitude generated by the LED component units (LG) that has a known correlation to the color temperature of the light emission produced by the said LED component units (LG), and

at least one control means (CM) for generating control information for at least one of the said adjustable power sources (ADJ-PW) in response to measurement data received from the said measuring means (MM) to control production of at least one color component in at least one LED component (LED).

2. LED operation light according to claim 1, characterized in that

at least one of the said measuring means (MM) has been arranged to measure intensities of the said emitted color components.

3. LED operation light according to claim 1 or 2, characterized in that

at least one set of the aforesaid measuring means (MM) has been arranged to measure temperature of the said LED components (LED).

4. LED operation light according to any one of the preceding claims, characterized in that

the said measuring means (MM) comprise at least one measuring sensor (SE), which has been arranged to output the said measurement data as a measurement signal (MS), and the said control means (CM) comprise at least one processor (MP) or logic circuit, which has been arranged to produce the said control information as a control signal (CS).

5. LED operation light according to any one of the preceding claims, characterized in that

the said LED component unit (LG) comprises a red (R), a green (G) and a blue (B) LED component.

6. LED operation light according to claim 5, characterized in that

the light comprises at least two, e.g. three LED component units (LG), which units comprise a red (R), a green (G) and a blue (B) LED component (LED) arranged in a row, the said LED component units (LG) being arranged to form a row aligned with the said LED component row.

7. LED operation light according to any one of the preceding claims, characterized in that

at least some of the said LED components are LED components (LED) emitting different shades of white (W).

8. LED operation light according to any one of the preceding claims, characterized in that

the LED components (LED) emitting each of the color components are connected functionally in parallel and/or electrically in series.

9. LED operation light according to any one of the preceding claims, characterized in that

it comprises at least one adjustable power source (ADJ-PW) for each LED component color to be emitted, each adjustable power source (ADJ-PW) being arranged to supply power to LED components (LED) emitting a given color component.

10. LED operation light according to claim 9, characterized in that

the said adjustable power sources (ADJ-PW) are integrated with the LED components (LED).

11. LED operation light according to any one of the preceding claims, characterized in that

the said LED component (LED) is a high power LED component whose average input power exceeds 500 mW.

12. LED operation light according to any one of the preceding claims, characterized in that

one of the said power sources (PW) is a constant-current source.

13. LED operation light according to any one of claims 6-12, characterized in that

the light comprises a collimator arrangement (CO) functionally connected to it and aligned with the row formed by the said LED component units (LG).

14. LED operation light according to claim 13, characterized in that

the said collimator arrangement (CO) comprises collimators (CO) provided in the said LED component units (LG).

15. LED operation light according to any one of the preceding claims, characterized in that

the angle ($\alpha$) between the central rays of the light beams emitted by the outermost LED component units (LG) is at least 5 degrees.

16. LED operation light according to any one of the preceding claims, characterized in that

the aforesaid at least two LED component units (LG) comprise LED components (LED) comprising a lens-reflector component LR (702), the aforesaid measuring means (MM), such as an RGB color sensor, being integrated with the said lens-reflector LR (702) to measure the color component or components emitted from the LED component (LED) in question.

17. LED operation light according to any one of the preceding claims, characterized in that

it comprises LED components (LED) producing N different color components, N being an integer equal to or higher than two, and adjustable power sources (ADJ-PW) arranged for at least N-1 LED components (LED) producing different color components.

18. LED operation light according to claim 17, characterized in that

it comprises N pieces adjustable power sources (ADJ-PW).

19. A method for controlling the color temperature of a LED operation light, in which method:

light emission comprising color components of at least two different wavelengths is produced in response to the power supplied by at least two power sources (PW), at least one of which is an adjustable power source (ADJ-PW), to a LED component unit (LG) comprising at least one LED component (LED), characterized in that, in the said method:

the color temperature of light produced by the LED component units (LG), being possibly reflected from some surface, or at least one magnitude

generated by them and having a known correlation to the color temperature of the light produced by the LED component units (LG), is measured, and

control information for at least one of the said adjustable power sources (ADJ-PW) is produced in response to measurement data obtained from the said measurement to control the production of at least one color component in at least one LED component (LED).

20. A method according to claim 18, c h a r a c t e r i z e d in that

intensity of each emitted color component is measured, e.g. by measuring intensities of emissions of LED components producing red, green and blue color components by means of an RGB color sensor.

21. A method according to claim 19 or 20, c h a r a c t e r i z e d in that

temperature of the LED components (LED), especially temperature of a heat sink arranged to be shared by the said components is measured, and production of color components is controlled in a desired manner on the basis of characteristic temperature-emission correlation of each of the LED components used.

22. A method according to any one of claims 19 – 21, c h a r a c t e r i z e d in that

emission of at least one of the said color components is controlled by means of at least one adjustable power source by connecting at least some of the LED components (LED) producing the color component in question electrically in series, and this series to at least one of the said adjustable power sources, so that the production of that color component of light changes in response to the adjustment of the said at least one power source.

23. A method according to any one of claims 19 – 22, c h a r a c t e r i z e d in that

LED components producing N different color components are used, N being an integer equal to or higher than two, and the production of at least N-1 color components is controlled.

24. A method according to claim 23, c h a r a c t e r i z e d in that the production of N color components is controlled.